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ABSTRACT

The purpose of this study was to determine the degree and type of differences in teaching competencies between a group of experienced teachers and interns on four dimensions: 1) ability to effect gains in achievement of pupils in mini-lessons with specific behavioral objectives, 2) the quality of the teaching process in teaching the mini-lessons, 3) ability to solve simulated classroom incidents, and 4) attitude toward and perceptions of the teacher's role. Comparisons were made between 22 elementary school teachers and 15 college students selected from a group of 150 volunteers who had no formal education courses or teaching experience. Teaching quality and ability to solve simulated incidents were judged by several experienced professors of education; pupil achievement was measured by a subject-oriented test; attitude toward teaching was assessed using three standardized tests. Results indicated that although the experienced teachers were rated more effective in teaching, there were no differences in the ability of the two groups to bring about intended behavioral change in subject matter. Secondly, the interns scored higher in their ability to solve simulated teaching problems. Lastly, the interns tended to emphasize the role of a teacher as a motivator more and as a communication specialist significantly less than did the experienced teachers. Implications are drawn for competency-based programs. (Author/RT)

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# COMPETENCIES OF TEACHERS AND INTERNS:

# IMPLICATIONS FOR TEACHER EDUCATION

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## Introduction

Most teacher educators assume that preservice students are significantly inferior to experienced teachers in a number of teaching competencies deemed critical to being a proficient teacher. This assumption has led to the proliferation of elaborate teacher education programs which emphasize a variety of courses in different aspects of educational theory and methodology. The latter are designed to bring the competency of the preservice student into line with that of the experienced teacher. State certification laws, school district salary schedules, tenure policies and hiring practices all reflect the basic assumption of the competency discrepancy between the experienced teacher and the novice.

The relevancy of the content of current teacher education programs depends in large part on the accuracy of the assumption that a competency discrepancy exists between experienced teachers and novices. The pilot investigation reported herein was an attempt to verify this assumption as it pertains to certain major areas of behavior considered relevant to teaching proficiency.

The purpose of this pilot study was to attempt to determine the degree and types of differences, if any, between experienced teachers and college students with no formal training in teaching but who were receiving classroom experience.

## Method

Subjects: The pool of subjects from which the participants were chosen consisted of approximately 150 Occidental College students who had indicated an interest in voluntary, unrenumerated tutoring of disadvantaged and underachieving public school pupils. From this pool, 15 students were selected on the basis of a series of interviews with faculty members and the following four criteria: 1)year in college, 2) major, 3) sex, and 4) lack of exposure to

formal education courses or formal teaching experience in regular classrooms. An attempt was made to select approximately equal numbers of students from each of the four years in college, a wide representation of majors, and equal numbers of males and females.

Immediately after selection each student intern was assigned to a classroom and teacher in the grade level of their choice between first and sixth grades in a school in a district which qualified for Title I funding. The students were required to spend approximately four hours a week in the classroom from the time they entered, which was in November, until the end of the school year.

The comparison subject group consisted of the 22 elementary school teachers who were involved in the program and the evaluation procedures.

After the students had spent 15 to 20 hours in the classroom over a three to four week period observing the dynamics of the classroom and the behavior of the children, the assessment of his teaching proficiency in the four areas indicated below commenced:

1. Ability to effect gains in achievement of pupils in the subject matter of minilessons with specific behavioral objectives.
2. The quality of the teaching process demonstrated in teaching the minilessons as judged by expert professional educators.
3. Ability to solve simulated classroom incidents.
4. Attitudes toward and perceptions of the teacher's role.

In the case of the first three of these areas of competency, no standardized measures are available which have been normed on groups of known teaching competency and which could be used to estimate the competency of the interns. Thus the teachers with whom the students were serving their intership in the present study were used as the reference group against which to compare the interns. In the case of the fourth area comparisons were made between the interns and national norms as well as between the interns and their teachers.

Ability to effect gains in achievement--minilessons: Five minilessons were developed for assessing apprentice competency in effecting growth in achievement in pupils. The subject areas representing the minilessons were the following: science, skill in using the library, art, spelling, and mathematics. In each of the above five areas covered by minilessons, different concepts and content were devised for the three grade ranges 1-2, 3-4, and 5-6. Thus, there was a science minilesson for grades 1-2, another science lesson for grades 3-4, and so on. Specific concepts and content and precisely defined behavioral objectives were developed for each minilesson at each grade level. The administration was standardized and the same tests were always given prior to and after the presentation of the minilesson. Teachers and interns gave the minilessons under identical conditions to randomly assigned groups of children of equal size, and achievement resulting from intern and teacher lessons was assesed the same.

Since the purpose of the study was to determine the competency of novice teachers, no formal instruction or training as to how to teach the minilessons was given to either the apprentices or the teachers. Both groups were given explicit instructions, however, concerning the subject area to be covered and the objectives of the lesson. The minilessons were approximately 20 minutes long although no attempt was made to control the length within the limits of about 15 to 25 minutes.

Quality of the teaching process: In order to determine the quality of the teaching process, video-taped recordings were made of students and teachers giving the minilessons. These were rated independently on a 7-point scale by two professors of education with years of experience in evaluating the performance of student teachers. The average rating given to the performance of a teacher or student on a minilesson by the two educators was used as the summary measure of the quality of the teaching process.

Problem solving of critical incidents: An important aspect of teacher effectiveness is the ability to cope with critical interpersonal and behavioral problems which arise frequently in any classroom. For fair and precise measurement of this aspect of teaching it is necessary to provide identical critical situations to all those whose competency in this area is being assessed. The method for accomplishing this in the present study was to present the filmed simulated critical incidents from the SRA Inner-City Simulation Laboratory. Two of these incidents were used: incident 10 which portrays a pupil disrupting a standardized intelligence test being administered to students in a classroom, and incident 18 which presents the problem of a child arriving at school before the authorized school opening time.

The incidents were presented as they would be viewed through the eyes of the teacher of the class. Prior to seeing the films, interns and teachers were given background information concerning the pupils who were involved in the above incidents. This included cumulative records, notes from counselors and psychologists, letters to and from parents, etc. After each film, the apprentices and teachers were given a standardized questionnaire covering a number of aspects of the incidents considered relevant to evaluating the understanding of the respondent.

The completed questionnaires were scored on the basis of criteria obtained from responses to the films of four professional educators who presumably made valid interpretations of the incidents.

Attitudes toward and perception of the role of the teacher: These were measured by three instruments: The Minnesota Teacher Attitude Inventory (MTAI) the Kerlinger Teacher Attitude Inventory, and the Teacher Role Perception Scale (Greenwood, 1968). A single score is obtained from the MTAI. The Kerlinger scale yields three scores, one for progressivism, one for conservatism, and one for the consistency with which the respondent chooses either conservatism or progressivism. The Teacher Role Perception Scale yields four sub-scores,

each indicating the degree to which the respondent perceives himself as playing one of four roles believed to be relevant to effective teaching. These are the four roles:

a. Teacher as a problem solver

b. Teacher as a motivator

c. Teacher as a communication specialist

d. Teacher as a promotor of social growth

In the case of the MTAI, comparisons were made between the interns and these reference groups: the teachers of the interns, students who have completed all requirements for the elementary credential, for which national norms are given by the authors of the scale, and teachers with four or more years of training, for which national norms are also given by the authors of the scale. In the cases of the Kerlinger and Teacher Role Perception Scale, comparisons were limited to those between interns and their teachers.

## Results

Minilessons: Table 1 presents the achievement gain scores of experienced teachers and interns and the differences in these scores for the two groups across all five minilessons and three grade levels. A positive differential gains score indicates that the students effected greater gains than the teachers, a negative gains score indicates the converse. It can be seen that the differential gains are about as often in the direction of favoring the interns as they are in the direction of favoring the teachers. It also reveals that the significance of these differential gains are about as often in the direction of favoring the interns as in the direction favoring the teachers.

Quality of the teaching process: The average rating of the professional educators of the video-taped records of three of the minilessons were obtained as the basis for determining the quality of the teaching process employed by teachers and interns. On the 7-point scale employed by the judges the median

score across the three lessons was 5.4 for teachers and 3.5 for students. This difference was significant beyond the .05 level.

Problem solving of critical incidents: Table 2 presents the results of the analysis of the responses of apprentices and teachers to the critical incidents. It also shows the analysis of a group of regular student teachers who were about to complete their formal training in the Occidental College education program. Higher medians indicate greater agreement with the professional educators whose responses formed the basis for scoring the questionnaire. It is evident that the interns uniformly make higher scores than the regular teachers. In the case of incident 10 this difference is significant. Thus, if it can be assumed that the responses of the professional educators indicate the "true" understanding and solution to the interpersonal problems portrayed in the incidents, the interns are closer to a real understanding of these than regular teachers.

Attitudes toward and perception of the teacher's role: Table 3 reveals that the interns and their teachers received virtually identical mean scores on the MTAI. When compared with the norms of the MTAI, both groups fell approximately at the 50th percentile of experienced teachers responding to this scale. The scores of both interns and regular teachers were at the 25th percentile of those receiving the elementary school credential.

Table 4 reveals that on the Kerlinger scale the interns and teachers show approximately equal tendencies toward progressivism in education, but students are significantly less traditionalistic and significantly more consistent in holding to this position than the teachers were in holding to their greater traditionalism.

Finally, Table 5 indicates that in terms of their perceptions of the role of the teacher, teachers and interns were similar in the stress which they put on the role of the teacher as a problem-solver and a promoter of social growth. However, interns tended to emphasize the teacher as a motivator more and to

emphasize the teacher as a communication specialist significantly less than did the regular teachers.

Relationship between achievement produced and the quality of the teaching process: Much interest has been generated recently about the relationship between teaching effectiveness as measured by growth in achievement (i.e., the product criterion of teaching), and as measured by the quality of the process used in teaching. Most research on teacher effectiveness has emphasized the process criterion. However, there is increasing attention being directed at attempting to use the product criterion of effectiveness. Thus, in the present study an attempt was made to determine the degree of relationship between these two criteria of effectiveness. The rank-difference correlation between growth in achievement and the judged quality of the teaching process for interns and teachers combined was .10 which is negligible.

## Discussion

The finding that the mini-lesson technique did not differentiate regular teachers mean performance from the mean performance of the interns may be accounted for by the selection procedure by which the interns were chosen. The interns represented a small sample of the total applicant pool picked because of high motivation, tutoring experience, and high recommendations - the best of an already highly competent applicant pool.

In actual numerical terms, the mean differences between the scores of the student teachers and the student interns on the critical incidents was as great or greater than the differences between the scores of these student teachers and the regular teachers - implying that only the smaller N of the student teacher group was accounting for the insignificant statistical finding. The strong possibility remains that with larger student teachers Ns, the student interns (who had received mainly experience as opposed to education courses) would have been shown to be superior on this measure to the student teachers.

It must also be noted that the author administering the stimulus films noted a much less serious attitude towards the task on the part of the regular teachers which may have resulted in their lower scores.

Our evaluation of the process dimension needs further study. First, ratings should be made on specific teaching behaviors rather than on global impressions of teacher behavior. Secondly, there are a number of variables which might have influenced the differences in ratings obtained i.e., dress and age factors. Since the lessons were video-taped, the college professors were able to determine the experienced teacher from the interns. In future research some attempt must be made to minimize the possible confounding effects of these variables.

The inability to find major differences in teaching competency favoring experienced teachers on the dimensions studied is consistent with other recent research. For example, Popham (1971) also found that teachers did not possess skills to a much greater degree than laymen in accomplishing intended behavior changes in learners. Popham blames teacher training institution for their difficiency in training for this important role.

We must reexamine the notion of the "experienced teacher". In what areas is he experienced? What competencies does he have which the pre-service teacher lacks? Perhaps differences between preservice and inservice teachers pertain more to social psychological variables such as organizational socialization (role learning, classroom control, etc.) than instructional competencies.

The research evidence regarding teacher competencies strongly supports the development of competency - based curriculums in teacher education. These programs have several advantages over existing programs: a) they are composed of separate modules (learning units) emphasizing the attainment of specific objectives, and b) students proceed through a pre-assessment stage which

determines the extent of their knowledge or competency in a given area. If a student demonstrates competency in a given area, he may proceed to other areas which he is less competent. Presently, most programs don't have any clearly defined competencies, and thus, it is difficult to determine what competencies the student takes with him (if any) after he leaves the program. Perhaps the student had these competencies before he began the program. Teacher educators must begin dealing with the possibility of these realities in future program development.

References

Popham, W. J. Teaching Skill Under Scrutiny. Phi Delta Kappan, 1971, 52, 599 - 602.

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TABLE 1. ACHIEVEMENT GAINS AS MEASURED BY MINILESSON EVALUATION

| Grade | Teachers | Apprentices | Differential Achievement Gain | Significance of Differential |
|---|---|---|---|---|
| | | SCIENCE MINILESSON | | |
| 1 & 2 | 1.28 | 1.00 | -.28 | N.S. |
| 3 & 4 | 1.00 | 3.17 | +2.17 | N.S. |
| 5 & 6 | 1.19 | 2.16 | +1.42 | N.S. |
| | | LIBRARY MINILESSON | | |
| 1 & 2 | 1.03 | .75 | -.28 | N.S. |
| 3 & 4 | .10 | .22 | +.12 | N.S. |
| 5 & 6 | 3.00 | 2.21 | -.79 | N.S. |
| | | ART MINILESSON | | |
| 1 & 2 | .45 | 1.00 | +.55 | N.S. |
| 3 & 4 | 1.01 | 2.78 | +1.77 | $P < .05$ |
| 5 & 6 | 5.90 | 5.35 | -.55 | N.S. |
| | | SPELLING MINILESSON | | |
| 2 & 3 | 3.64 | 2.67 | -.97 | $P < .1$ |
| 5 | 3.50 | 3.17 | -.33 | N.S. |
| 6 | .50 | 2.50 | +2.0 | N.S. |
| | | MATH MINILESSON | | |
| 1 | 2.55 | 2.20 | -.35 | N.S. |
| 3 | .50 | 1.00 | +.30 | N.S. |
| 5 | 0.00 | .25 | +.25 | N.S. |

TABLE 2: MEDIAN COMPETENCY SCORES MADE BY THE APPRENTICES AND THE TWO REFERENCE GROUPS TO THE FILMED SIMULATED CLASSROOM INCIDENTS

| | Regular Teachers N = 15 Medians | Student Teachers N = 7 Medians | Student Apprentices N = 12 Medians | Significance of Difference Between Scores |
|---|---|---|---|---|
| Protocols from Incident 18 | | | | |
| Significance Levels Across Columns | 6.00 | 7.33 | 9.50 | N.S. |
| | 6.00 | 7.33 | | N.S. |
| | 6.00 | | 9.50 | N.S. |
| | | 7.33 | 9.50 | N.S. |

| | Regular Teachers N = 16 Medians | Student Teachers N = 7 Medians | Student Apprentices N = 12 Medians | Significance of Difference Between Scores |
|---|---|---|---|---|
| Protocols from Incident 10 | | | | |
| Significance Levels Across Columns | 7.75 | 15.00 | 10.83 | 0.01 |
| | 7.75 | 15.00 | | 0.01 |
| | 7.75 | 15.00 | 10.83 | N.S. |

TABLE 3: MEAN ATTITUDE SCORES ON THE MINNESOTA TEACHER ATTITUDE INVENTORY OF APPRENTICES AND TEACHERS

| Group | N | Means Scores | Significance of Difference Between Scores |
|---|---|---|---|
| Teachers | 16 | 59.909 | N.S. |
| Student Apprentices | 11 | 58.188 | |

TABLE 4: MEAN SCORES OF TEACHER APPRENTICES ON KERLINGER ATTITUDE SCALE

| Group | N | Scale | Mean Scores | Significane of Difference Between Scores |
|---|---|---|---|---|
| Teachers | 11 | A (Progressivism) | 9.1 | N.S. |
| Student Apprentices | 14 | | 9.3 | |
| Teachers | 11 | B (Traditionalism) | 5.6 | P .05 |
| Student Apprentices | | | | |
| Teachers | 11 | A-B (Consistency) | 3.4 | P .05 |
| Student Apprentices | 14 | | 4.7 | |